

Application No.: 10/666,558

Docket No.: 36507-193188

**AMENDMENTS TO THE CLAIMS**

This listing of claims will replace all prior versions, and listings, of claims in the application:

**Listing of Claims:**

1. (Currently amended) An enhanced scanning solutions module comprising:
  - a flow control subsystem;
  - a detector subsystem coupled to said flow control subsystem;
  - a ~~dryer~~/moisture separator subsystem coupled to said flow control subsystem;
  - a sampling subsystem coupled to said flow control subsystem; and
  - \_\_\_\_\_ a software control subsystem coupled to at least one of said flow control subsystem, said detector subsystem, said ~~dryer~~/moisture separator subsystem, and/or said sampling subsystem,
  - \_\_\_\_\_ wherein said flow control subsystem is adapted to be at least one of configured and/or reconfigured in a plurality of operator-selectable measurement subsystems prior to exhaust.
2. (Currently amended) The enhanced scanning solutions module of claim 1, wherein said sampling subsystem comprises at least one of:
  - a sample loop;
  - an absorbent trap; and/or
  - a gas chromatography injection port.
3. (Currently amended) The enhanced scanning solutions module of claim 1, further comprising at least one of:
  - \_\_\_\_\_ an in situ gas stream;
  - \_\_\_\_\_ a dryer;
  - \_\_\_\_\_ a moisture separator;

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a moisture sensor detector;

an exhaust;

a pneumatic supply;

a power supply;

a bypass module;

a feedback signal;

a detector subsystem feedback signal;

a calibration material;

a tracer gas;

a calibration gas; and/or

a pressure control subsystem.

4. (Currently amended) An enhanced scanning solutions module comprising:

a detector subsystem adapted to be selectably coupled to an in situ gas stream;

a sampling subsystem adapted to be selectably coupled to the in situ gas stream; and

a software control subsystem coupled to said detector subsystem, and said sampling subsystem,

wherein the enhanced scanning solutions module is adapted to be at least one of configured and/or reconfigured in a plurality of operator-selectable measurement subsystems prior to exhaust.

5. (Currently amended) The enhanced scanning solutions module of claim 4, further comprising:

a dryer/moisture separator subsystem coupled to said software control subsystem, wherein said moisture separator subsystem is adapted to be selectably coupled to the in situ gas stream.

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6. (Currently amended) The enhanced scanning solutions module of claim 4, wherein said sampling subsystem comprises at least one of:

a sample loop;

an absorbent trap; and/or

a gas chromatography injection port.

7. (Currently amended) The enhanced scanning solutions module of claim 4, further comprising at least one of:

an in situ gas stream;

a dryer;

a moisture separator;

a moisture sensor detector;

~~an exhaust;~~

a pneumatic supply;

a power supply;

a bypass module;

a feedback signal;

a detector subsystem feedback signal;

a calibration material;

a tracer gas;

a calibration gas; and/or

a pressure control subsystem.

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8. (Cancelled) ~~The enhanced scanning solutions module of claim 4, wherein the enhanced scanning solutions module comprises on-the-fly reconfigurability, and further comprises:~~  
~~a plurality of operator selectable modes.~~

9. (Currently amended) The enhanced scanning solutions module of claim 4, wherein the enhanced scanning solutions module further comprises at least one of:

a plurality of pre-programmable ~~operating modes~~ operator-selectable measurement subsystems that at least one of interactively configure and/or reconfigures to perform any of a plurality of measurement functions, subject to particular conditions; and/or

a plurality of on-the-fly, configurable and/or reconfigurable, operator-selectable measurement subsystems.

10. (Currently amended) The enhanced scanning solutions module of claim 4, wherein the enhanced scanning solutions module further comprises:

an interface between said detector subsystem and a gas handling subsystem allowing insertion of at least one of: a sample, another detector, a flowpath, a flow path rate, a dryer, a moisture separator, a moisture sensor detector, a bypass, an exhaust, a feedback, a detector subsystem feedback, a tracer gas, a calibration gas, a calibration material, a sample loop, an absorbent trap, a gas chromatographic injection port, and/or a trap.

11. (Currently amended) The enhanced scanning solutions module of claim 4, said software control subsystem comprises at least one of:

a timer;

a data logger;

a sequencer;

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a valve control system;

a monitor;

a display; and/or

a recording function.

12. (Currently amended) The enhanced scanning solutions module of claim 4, further comprising a membrane interface probe apparatus comprising:

a membrane interface probe (MIP) sensor housing having a larger diameter of at least about 2.125 inches than a conventional MIP sensor.

13. (Currently amended) The enhanced scanning solutions module according to claim 12 wherein said larger diameter MIP sensor housing is adapted for direct coupling to larger diameter couple with a rod systems.

14. (Currently amended) The enhanced scanning solutions module according to claim 12 wherein said larger diameter MIP sensor housing is adapted to be coupled allows use of said MIP sensor with larger capacity a push and hammer systems.

15. (Currently amended) The enhanced scanning solutions module according to claim 12 wherein said larger diameter MIP sensor housing is adapted for allows use in situations where a low sidewall support of the drive rod string exists applications.

16. (Currently amended) The enhanced scanning solutions module according to claim 12, wherein said larger diameter MIP sensor housing comprises is adapted to include two or more permeable membranes.

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17. (Currently amended) The enhanced scanning solutions module of claim 4, further comprising at least one of:

a membrane interface probe (MIP) ~~sensor housing~~ having two or more permeable membranes coupled to said housing; and/or a MIP adapted to provide circumferential sensing.

18. (Currently amended) The enhanced scanning solutions module ~~MIP sensor~~ of claim 17, wherein said two or more permeable membranes of said MIP housing are arranged equidistant about a circumference of said MIP ~~sensor housing~~.

19. (Currently amended) The enhanced scanning solutions module ~~MIP sensor~~ of claim 18, wherein said ~~MIP sensor housing~~ is operative ~~to improve circumferential sensing and to increase provide circumferential likelihood of collection of volatile organic mass by said MIP sensor housing.~~

20. (Currently amended) The enhanced scanning solutions module of claim 4, further comprising a membrane interface probe apparatus comprising:

a membrane interfacc probe (MIP) ~~sensor adapted to improve watertight integrity by including undersea cabling electrical couplings and~~ comprising at least one of a waterproof electrical coupling and/or an O-ring mechanical couplings, wherein at least one of said waterproof electrical coupling and/or said O-ring mechanical coupling are watertight.

21. (Currently amended) The enhanced scanning solutions module of claim 4, further comprising a modular membrane interface probe (MIP) apparatus comprising:

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a modular membrane interface probe (MIP) ~~comprising a sensor constructed from~~ a plurality of modular components allowing field serviceable replacement of any malfunctioning components of said plurality of modular components.

22. (Currently amended) The module of claim 21, wherein the modular MIP apparatus comprises at least one of:

an external barrel having a cavity; and/or

an inner core barrel assembly field-insertable into said cavity having a heater cavity, wherein said heater cavity is adapted to receive a field-insertable removable cartridge heating element.

23. (Original) The module of claim 21, wherein the modular MIP apparatus comprises a removable conductivity nose assembly.

24. (Original) The module of claim 21, wherein the modular MIP apparatus comprises a field-insertable removable cartridge heating element.

25. (Currently amended) The module of claim 21, wherein the modular MIP apparatus comprises at least one of a waterproof electrical connector and/or an O-ring seal.

26. (Currently amended) The module of claim 4, further comprising a membrane interface probe apparatus comprising:

a membrane interface probe (MIP) ~~sensor housing comprising an internal~~ removable trap ~~directly into the probe for the~~ adapted to collection and/or concentration of one or more volatile organic compounds.

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27. (Currently amended) The module of claim 26, wherein the MIP apparatus, wherein said removable trap is adapted to enable detection of lower levels of concentration levels of said one or more volatile organic compounds, and to specifically identify ~~of said one or more~~ compounds through ~~post-run chromatographic~~ analysis.

28. (Currently amended) The module of claim 26, wherein the MIP apparatus, further comprising: a calibrator adapted to calibrate ~~providing for calibration of~~ said MIP sensor using chromatographic methods.

29. (Currently amended) The module of claim 26, wherein the MIP apparatus further comprises means for at least one of simultaneous trapping and/or concentrating of volatile organic compounds during at least one of MIP sampling and/or logging events.

30. (Currently amended) The module of claim 4, further comprising a membrane interface probe apparatus comprising:

a membrane interface probe (MIP) sensor ~~comprising a heated transfer line from a body of said MIP sensor to a surface detector suite~~ adapted to minimizing loss of volatile organic compounds in a cold transfer line.

31. (Currently amended) The module of claim 4, wherein said enhanced scanning solutions module, further comprises: a sample introduction system coupled to said MIP adapted ~~to reduce overall equipment footprint and cost~~ to introduce a calibration gases; and to allow for simultaneous sampling of a volatile organic gas stream for ~~immediate~~ chromatographic analysis.



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32. (Currently amended) The module of claim 4, further comprising ~~a membrane interface probe apparatus comprising:~~

a global positioning system (GPS) receiver integrated with a data acquisition system adapted to allow simultaneous geo-referencing of at least one of detection and/or sampling points with sample data.

33. (New) The enhanced scanning solutions module of claim 1, further comprising:  
a feedback from a subsystem to said flow control subsystem.

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